

STUDIES IN THE EUPATORIEAE (COMPOSITAE). XXII.

THE GENUS PIPTOTHRIX

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Microscopic examination of the genus Piptothrix indicates that it is closely related to the genus Ageratina. The single character by which Piptothrix has been considered distinct is the readily deciduous pappus, but this character is common in species of Ageratina. It is impossible to comprehend how botanists have been able to recognize this genus in the past and we are not able to comprehend the kind of mentality that recognizes such a genus as Piptothrix but places such things as Ageratina, Critonia, Praxelis or Eupatorium brachychaetum B.L. Robinson in the genus Eupatorium. What we recognize here as Piptothrix is based on different characters and contains a different alignment of species.

An examination of the species previously placed in Piptothrix shows that they fall into two series. One series that includes the type species P. palmeri has no evident carpopodium and no pales on the receptacle. The pappus setae in this group are not reduced in size. The second series of species has both distinct carpopodia and pales and the pappus setae are short. The tendency for more broadly ovate longer petiolate leaves and more flowers per head indicates the second series is distinct and we have found their basic characters to agree with the genus Jaliscoa. We would place in Piptothrix, Eupatorium areolare DC. a species that is often confused with others of the genus Piptothrix and which has been included in discussions of the genus by at least one author (Cronquist, 1965).

The genus Piptothrix is most markedly distinct from Ageratina by the lack of a carpopodium, but a number of the species also have inner surfaces of the corolla lobes much smoother, and the heads fewer flowered. Smaller heads with shorter flowers was one of the few characteristics that help to distinguish most of what was Piptothrix from Ageratina.

Piptothrix A. Gray, Proc. Am. Acad. 21:383.1886.

Sparingly to few branched herbs or shrubs; leaves opposite, rarely subopposite, ovate to broadly ovate, margin serrulate to serrate. Inflorescence a cymose-panicle; heads 7-18 flowered; involucre of 7-15 equal to subequal phyllaries in two series, receptacle slightly convex, glabrous to spinose. Corollas campanulate, inner surface of lobes smooth to papillose, outer surface glabrous, stomates absent. Anther collar composed of numerous quadrate cells below, elongate cells above, all with little

or no ornate thickening on the walls; exothecial cells usually lax and somewhat longer than wide; anther appendage large. Pollen spherical, tricolpate, spinose. Style often swollen at base, glabrous; surface cells of stylar appendage densely long projecting. Achenes prismatic, usually 4-5 costate, bearing setae; carp-podium indistinct; embryo usually borne high in the achene, often well sclerotized at the lower end, basal vasculature of achene usually united well above level of carp-podium; pappus of long setae often deciduous. Chromosome number not determined (numbers expected $x = 17$ as in Ageratina or $x = 16$ as in Oxylobus).

Type species: Piptothrix palmeri A. Gray

Our studies indicate that the genus contains the following five species all from Mexico.

Piptothrix areolare (A.P.Decandolle) R.M.King & H.Robinson, comb. nov. Eupatorium areolare A.P.Decandolle, Prodr. 5: 169. 1836. Chiapas, Guerrero, Jalisco, Mexico, Michoacán, Morelos.

Piptothrix jaliscensis B.L.Robinson, Proc. Bost. Soc. Nat. Hist. 31:268. 1904. Jalisco.

Piptothrix palmeri A. Gray, Proc. Amer. Acad. 21:383. 1886. Chihuahua.

Piptothrix pubens A. Gray, Proc. Amer. Acad. 22:419. 1887. Jalisco, Chihuahua.

Piptothrix sinaloae S.F.Blake, Proc. Biol. Soc. Wash. 32:190. 1919. Sinaloa.

Species Excluded

Piptothrix goldmanii B.L.Robinson = Jaliscoa goldmanii

Piptothrix paleacea A. Cronquist = Jaliscoa paleacea

Literature Cited

Cronquist, A. J. 1965. Studies in Mexican Compositae I. Miscellaneous new species. Mem. N. Y. Bot. Gard. 12: 286-292.